IN THE CLAIMS:

1. (Cancelled)

2. (Cancelled)

3. (Currently Amended) The optical multi-demultiplexer according to claim 12 [[1]], wherein the different refractive index region has a refractive index equal to a refractive index of a clad layer of the second slab waveguide.

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Currently Amended) The optical multi-demultiplexer according to claim 12 [[1]], wherein the different refractive index region comprises a pair of peninsular different refractive index regions projecting from both sides of the second slab waveguide toward a central portion of the second slab waveguide.

8. (Currently Amended) The optical multi-demultiplexer according to claim 12 [[1]], wherein the different refractive index region is spaced apart from each of both sides of the second slab waveguide.

9. (Currently Amended) The optical multi-demultiplexer according to claim 12 [[1]], wherein the different refractive index region has a width varying in a direction in which the waveguides of the channel waveguide array are arranged.

-2-

10. (Currently Amended) The optical multi-demultiplexer according to claim 12 [[1]], wherein the different refractive index region has a refractive index varying in a direction in which the waveguides of the channel waveguide array are arranged.

11. (Currently Amended) The optical multi-demultiplexer according to claim 12 [[1]], wherein island regions having a refractive index different from each of the first and second slab waveguides are formed, in addition to the different refractive index region, on at least one of a position close to the channel waveguide array within the first slab waveguide and a position close to the channel waveguide array within the second slab waveguide.

12. (New) An optical multi-demultiplexer comprising:

a substrate;

input waveguides formed on the substrate;

a channel waveguide array including a plurality of curved waveguides arranged such that optical path lengths of adjacent ones of the curved waveguides are gradually increased from an inside toward an outside of a curved configuration of the curved waveguides;

output waveguides formed on the substrate;

a first slab waveguide formed between the input waveguides and the channel waveguide array;

a second slab waveguide formed between the channel waveguide array and the output waveguides, and

a different refractive index region formed at a position close to the channel waveguide array within the second slab waveguide, the different refractive index region having a lower refractive index than a core of the second slab waveguide, the different

-3-

refractive index region extending in a direction in which the waveguides of the channel waveguide array are arranged, and

the different refractive index region having a tapered shape decreasing in width from both side portions toward a central portion of the second slab waveguide.

13. (New) An optical multi-demultiplexer comprising:

a substrate;

input waveguides formed on the substrate;

a channel waveguide array including a plurality of curved waveguides arranged such that optical path lengths of adjacent ones of the curved waveguides are gradually increased from an inside toward an outside of a curved configuration of the curved waveguides;

output waveguides formed on the substrate;

a first slab waveguide formed between the input waveguides and the channel waveguide array;

a second slab waveguide formed between the channel waveguide array and the output waveguides, and

a different refractive index region formed at a position close to the channel waveguide array within the second slab waveguide, the different refractive index region having a higher refractive index than a core of the second slab waveguide, the different refractive index region extending in a direction in which the waveguides of the channel waveguide array are arranged, and

the different refractive index region having a reverse-tapered shape increasing in width from both side portions toward a central portion of the second slab waveguide.

-4-

14. (New) An optical multi-demultiplexer comprising:

a substrate;

input waveguides formed on the substrate;

a channel waveguide array including a plurality of curved waveguides arranged such that optical path lengths of adjacent ones of the curved waveguides are gradually increased from an inside toward an outside of a curved configuration of the curved waveguides;

output waveguides formed on the substrate;

a first slab waveguide formed between the input waveguides and the channel waveguide array;

a second slab waveguide formed between the channel waveguide array and the output waveguides, and

a different refractive index region formed at a position close to the channel waveguide array within the second slab waveguide, the different refractive index region having a higher refractive index than a core of the second slab waveguide, the different refractive index region extending in a direction in which the waveguides of the channel waveguide array are arranged,

wherein the different refractive index region comprises a pair of peninsular different refractive index regions projecting from both sides of the second slab waveguide toward a central portion of the second slab waveguide.